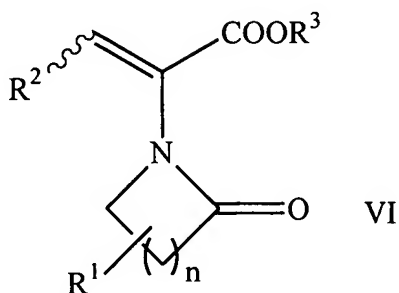


AMENDMENT

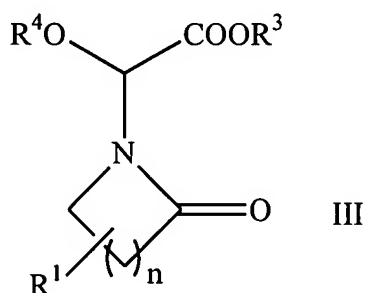
Claims 1 – 47 (Canceled)

48. (Currently Amended) A method for producing ~~the compound of Claim 38 *in situ*,~~
a compound having the formula VI



comprising

(a) reacting a compound having the formula III



~~wherein R³ and R⁴ are, independently, hydrogen, substituted or unsubstituted, branched or straight chain C₄ to C₂₀ alkyl group; substituted or unsubstituted C₃ to C₈ cycloalkyl group; substituted or unsubstituted C₆ to C₂₀ aryl group; or substituted or unsubstituted C₄ to C₂₀ heteroaryl group, wherein R¹ can also be hydrogen~~

with PX_3 , wherein X is fluoride, chloride, bromide, or iodide, to produce a halogenated lactam;

- (b) reacting the halogenated lactam produced in step (a) with a phosphite having the formula $P(OR^6)_3$, wherein R^6 is substituted or unsubstituted, branched or straight chain C_1 to C_{20} alkyl or substituted or unsubstituted C_3 to C_8 cycloalkyl, to produce a phosphonated lactam; and
- (c) reacting the phosphonated lactam produced in step (b) with an aldehyde having the formula $HC(O)R^2$ in the presence of a base,

wherein steps (a), (b), and (c) are performed *in situ*, and

wherein ~~R^2 is~~ R^1 , R^2 , R^3 and R^4 are, independently, hydrogen, substituted or unsubstituted, branched or straight chain C_1 to C_{20} alkyl; substituted or unsubstituted C_3 to C_8 cycloalkyl; substituted or unsubstituted C_6 to C_{20} aryl; or substituted or unsubstituted C_4 to C_{20} heteroaryl; R^1 , R^2 and R^4 may, independently, be hydrogen; and n is from 0 to 5;

~~in the presence of a base,~~

~~wherein steps (a), (b), and (c) are performed *in situ*.~~

Claims 49 and 50 (Canceled)

51. (New) The method of Claim 48 wherein n is 2 and R^1 is hydrogen.

52. (New) The method of Claim 51 wherein R^2 and R^3 are methyl.

53. (New) The method of Claim 51 wherein R^2 is methyl and R^3 is ethyl.

54. (New) The method of Claim 52 wherein R^4 is methyl or ethyl.

55. (New) The method of Claim 53 wherein R⁴ is methyl.
56. (New) The method of Claim 52 or 53 wherein R⁶ is methyl or ethyl.
57. (New) The method of claim 48 wherein the base is non-hydroxide base with a pKa of about 13 or above.
58. (New) The method of claim 57 wherein the base is an amidine base or a guanidine base.
59. (New) The method of claim 57 wherein the base is 1,5-diazabicyclo[4.3.0]non-5-ene (DBN), 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU), or tetramethylguanid